SEQUENCE LISTING

<110> WEI, Ming-Hui et al.

<120> ISOLATED HUMAN KINASE PROTEINS, NUCLEIC
    ACID MOLECULES ENCODING HUMAN KINASE PROTEINS, AND USES
    THEREOF

<130> CL001164CIP-DIV II

<160> 6

<170> FastSEQ for Windows Version 4.0

<210> 1
<211> 1133
<212> DNA
<213> Homo sapiens

<400> 1
```
gcggggcgga acagatcgca gacctggggg ttcgcagagc cgccagtggg gagatgttga 60
agttcaaata tggagcgcgg aatcctttgg atgctggtgc tgctgaaccc attgccagcc 120
gggcctccag gctgaatctg ttcttccagg ggaaaccacc ctttatgact caacagcaga 180
tgtctcctct ttcccgagaa gggatattag atgccctctt tgttctcttt gaagaatgca 240
gtcagcctgc tctgatgaag attaagcacg tgagcaactt tgtccggaag tattccgaca 300
ccatagctga gttacaggag ctccagcctt cggcaaagga cttcgaagtc agaagtcttg 360
taggttgtgg tcactttgct gaagtgcagg tggtaagaga gaaagcaacc ggggacatct 420
atgctatgaa agtgatgaag aagaggctt tattggccca ggagcaggtt tcatttttg 480
aggaagagcg gaacatatta tctcgaagca caagcccgtg gatcccccaa ttacagtatg 540
cctttcagga caaaaatcac ctttatctgg tcatggaata tcagcctgga ggggacttgc 600
tgtcactttt gaatagatat gaggaccagt tagatgaaaa cctgatacag ttttacctag 660
ctgagctgat tttggctgtt cacagcgttc atctgatggg atacgtgcat cgagacatca 720
agcctgagaa cattctcgtt gaccgcacag gacacatcaa gctggtggat tttggatctg 780
ccgcgaaaat gaattcaaac aagatggtaa aaaatggaat aagatagctt aatagagttt 840
atactaaaaa gtgttcttgg tcctcctaag tttgggaagt gttgggataa aatggtgaac 900
aatgttttgg agcctttggc agtgtatggg ggtggggaca gggacacaga accatttccc 960
agaccgtggc acctttttat ttatagtgcc tgttaatacc ctccaagaca tttttaggag 1020
cattgttata gtttggttag aaataaagga aaatgcttaa aaaaaaaaaa aaaaaaaaaa 1080
aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaa      1133
```

<210> 2
<211> 257
<212> PRT
<213> Homo sapiens

<400> 2
```
Met Leu Lys Phe Lys Tyr Gly Ala Arg Asn Pro Leu Asp Ala Gly Ala
1               5                   10                  15
Ala Glu Pro Ile Ala Ser Arg Ala Ser Arg Leu Asn Leu Phe Phe Gln
            20                  25                  30
Gly Lys Pro Pro Phe Met Thr Gln Gln Gln Met Ser Pro Leu Ser Arg
        35                  40                  45
Glu Gly Ile Leu Asp Ala Leu Phe Val Leu Phe Glu Glu Cys Ser Gln
    50                  55                  60
Pro Ala Leu Met Lys Ile Lys His Val Ser Asn Phe Val Arg Lys Tyr
65                  70                  75                  80
Ser Asp Thr Ile Ala Glu Leu Gln Glu Leu Gln Pro Ser Ala Lys Asp
                85                  90                  95
Phe Glu Val Arg Ser Leu Val Gly Cys Gly His Phe Ala Glu Val Gln
            100                 105                 110
Val Val Arg Glu Lys Ala Thr Gly Asp Ile Tyr Ala Met Lys Val Met
        115                 120                 125
Lys Lys Lys Ala Leu Leu Ala Gln Glu Gln Val Ser Phe Phe Glu Glu
```

1

```
          130                  135                  140
Glu Arg Asn Ile Leu Ser Arg Ser Thr Ser Pro Trp Ile Pro Gln Leu
145                  150                  155                  160
Gln Tyr Ala Phe Gln Asp Lys Asn His Leu Tyr Leu Val Met Glu Tyr
                 165                  170                  175
Gln Pro Gly Gly Asp Leu Leu Ser Leu Leu Asn Arg Tyr Glu Asp Gln
             180                  185                  190
Leu Asp Glu Asn Leu Ile Gln Phe Tyr Leu Ala Glu Leu Ile Leu Ala
         195                  200                  205
Val His Ser Val His Leu Met Gly Tyr Val His Arg Asp Ile Lys Pro
     210                  215                  220
Glu Asn Ile Leu Val Asp Arg Thr Gly His Ile Lys Leu Val Asp Phe
225                  230                  235                  240
Gly Ser Ala Ala Lys Met Asn Ser Asn Lys Met Val Lys Asn Gly Ile
             245                  250                  255
Arg


<210> 3
<211> 48763
<212> DNA
<213> Homo sapiens

<400> 3
gggtgacgga gtgagattct gtctaagaaa aaagaaaaaa aaagaggtgc ttgataaata 60
gtagctatcc attattggcc ccgggaacaa gaagtaagtt atgtttgggg aaggaaaaaa 120
gaacaaatgt gtattaagca agcctgtagc tctaattatg tgctggtgtg cgtgtgtgtg 180
tgtgtgtgtg tgagagagag aacacatctc cagttctgtc tactgtagaa ttaggagagt 240
acaaaaagga ctttacatat ataaatagaa catacacaca cacacatgcg tgcacacata 300
tacacacaat ttaatcatta tgaaaccaca tccatattgt tgctacctag gttaagaaat 360
agatcacagc agcaccccaa caccctgaaa ggcctccatc ccaaccccag gtaactacta 420
ttctggctgt tgctttcttt atggtttttgt cattacttta aacaatgaca aaaactgcaa 480
tgatttgcat caacctaata catccctcct taaacaatgt tgctttgttt tgtcctgttt 540
tggaacttat aagaatggaa tcataatgga atcatatgtt attttcttgc ttccttcatt 600
aggccttgtt ttgagactca ttatgtcatt gtggttagtt gcagtttatt cttttcatt 660
gcttgtgaaa acactgcaat atacaatttt gtcttttcta ctgctgatgg acatttatat 720
cacttccagt tttttgcgaa cactattttg tattcttata cacatctctt ggtgtacata 780
agtaggagtt tctcgccggc gtggtggctc agggcctgta atctcagcac tttgggaggc 840
cgaggtgggc agatcactcg aggtcaggag ttcaagacca gcctggccaa cacggtgaaa 900
ccccatctct actaaaaata caaacaattg ggcatggtgg catgcacctg taatcccagt 960
tacttgggag gatgagacaa gagaatagct tgaacctggg aggtggaggt tgcagtgagg 1020
cgagatcgtg ccattgcact ccagcctggg agacagagca agactccatc tcaaaataaa 1080
taaataaata ggagttttc ttaggtagag aaactacacc tagcaatagt catagaatgc 1140
acaaatcttc aatgttagca aataatgcca aacttttttt tcaaatttca aagagattgt 1200
atccatttac acgcctacgg gtactgtata agtgtgtgta cttccacatc ttcgcaaaca 1260
ctgtcacatc cttttgttgt tgttgttctc gaatttgagt gttattcttt ctcactgtga 1320
ctttattttt catattttct gattatgaac gaggttgaca actttcacac atttgttggt 1380
catctggatt tccttttttgg tgaagtgcct gtttaagtat ctcgtctata atttattta 1440
aagtgtcctt tcagacagtc tcaatgactg tcaccaactc cttgcagggc agtcagcccg 1500
gagatagagt aatcaaggta ggttgaagtc aagctcaaaa cattcgctgc ctcagctgta 1560
gcagaggacc actgggcttc cccaggtaac aagtacttct accttagcca catgagagag 1620
aaagaagacc aggcagagca gcctggctgc cttcctcctt gcaggtggcc gagagcaggg 1680
gacagcgccc tggcgacctc ctcaggatc ctagattaac agtcgcgtcc tcaaacgcag 1740
catcctgcgt aaccgccaat ttcaaacttc caagacctgc cctgctgatt ttgcccttcc 1800
ctttttcccg ttggtcgcga gtcaaaggaa gatgcaattt gattggctct cccttcact 1860
ttcctccatg cctttaggga catgggcggg gcctggctga gacgcccatg tctatcatag 1920
gagcggagac gctgattggt ccaaacacgg ctgagaccg cccgcgccgt tcctcgggtt 1980
caaacgcggc ggcgggaggc gcggggcgga acagatcgca gacctggggg ttcgcagagc 2040
gtgagtctga tcccccagac ccaattctac cgcacccggc tctgcaaggc caggggaggg 2100
ccgcctccac ccatacaagt cccgggtttc cctcccgccc cggggagggc ggcgattcca 2160
cccccagggc tgcgggaggc ctggagggtc ttccggggct agctgtgcgc gcgcccacct 2220
tccttgggag ccgaggggtc agccgagtgg tgctggggca ggaggcttgc tcctcccta 2280
```

```
aaccaggcgg agtgctttgt ctcttcagct ctgcctcctg tcagcactaa ctgcattatt 2340
ctgcccagtg tagtcggccg gttccttatt atctgcgtga acttagccat ttacttaacc 2400
tctctgtttc agcgtattca taccccgtgc ccaccccatc acctcatgat gcccccgcct 2460
ctttcgctct gctccagtcc gtctggcctc gctgttgctg gagaggccag gtcctgcctc 2520
agtgcttttg gcttggctgt ttcgtttgcc acggatgtct ttctttcccc agatatcaac 2580
atggcttgct ggtcattcgc ttcaggtctt caagtcttgg gtcaaatggt ggcttctcag 2640
tgaagtctta tttgaccaca ctaaaaattg caccatctca cccccattgt cctttcttg 2700
ctcgattttg tttttacccc atagcactta acaccttaca acaagctata tattttgctt 2760
atttcagtca ttcatttaat aactattcgc acctatttgt gtgccaggct atgtgtgccc 2820
ccactgcatg ggggcaaaca tctctgccct tgtggagctt ccattctaag gggggagata 2880
ataaacacat ttataagtaa gagagtatgt cagataagtg tatcatctcc tgtcacagtg 2940
agttaaaatc tggtgtttaa tctccatgat tagactgagc ttcctaaaac tggagtggta 3000
gctgattttc acctccttgt ccctgatatc ttgagggaga tcaggatctc tcaggccctt 3060
cctgctcaaa acataggaca cacttgactt ttctgatatc ctttcagcgc cagtggggag 3120
atgttgaagt tcaaatatgg agcgcggaat cctttggatg ctggtgctgc tgaacccatt 3180
gccagccggg cctccaggct gaatctgttc ttccaggtaa cagcctaccc tgccaacttt 3240
gctcacctgt gtgtgtcctt ggaatctcct tgtcactcac ctttgctttt atttatttgt 3300
ttatttattt agagtctcag tctctcaggc tggagtacag tggtgcaatc tcagctcact 3360
gcaacctccg cctcctgggt tcaagcgatt ctcctgcctc agcctccaga gtagctggga 3420
ctacagccgc ctgccaccac acccggctaa attttgtatt tttctttta gtagagacgg 3480
ggtttcacca tgttggccag gctagggtcg aactcctgac ctcaagtgat ccacctgcct 3540
tggcctccta aagtgctggg attacaggca tgaaccgtgc ccagcttgct tttattatag 3600
gaccagggat aatattttag gggaaattct gttttgtttt gtttgaaaca aggtcttctg 3660
tcgactctag gcctgtgcca ccatgcctgg ctaattttt aatttttgt agggatgggg 3720
tctcactgtg ttgcccaggc tgatatagaa cacctgactt caagtgagcc tcttgccttg 3780
gcctcccaaa gcactggggt tataggtgtg agccactgca cctggccctc tatttagagt 3840
tttatatgca ctgattcttt tggaaaaaag acactgtgca gaagtagata gctgaacttg 3900
ccttagaagg gagatctttt catatttctc acactttaca cttctgtact aaagtttatt 3960
cattcattga ttgattggtt gcttgcaaga cagggtcttg ctctgtggct caggctggag 4020
tgcattggca caatcacggc ttactgcagc cttgacctcc tgggctcaaa cgatcctccc 4080
acttcagctt cctgagtagc tgggaccaca ggtgtgtgcc accatacctg gctaattttt 4140
gtatttttg tagagatgag gtttcaccat gttgcccagg caggtctcga attcctgggc 4200
tcaagtgatc tacttgtcac agcttctgca agtgttgggc ttacaggcat aagcccctgt 4260
accagggcaa gtttgtcctt ttattgaaga aagaaaaata aatgaacaaa gatgctttt 4320
aaaactacaa tttctgtggg tataatccta ttcattttca ttgcagggat gtttatttt 4380
taagattttt ttttttttt tttgagacag agtcttcgct gtcgcccagg ctggagtgca 4440
gtggcgcgat ctcggctcac tgcaggctct gcccccgggg gttcacgcca ttctcctgcc 4500
tcagcctccc acgtagctgg gactacaggc gcccgtcacc tcgccggct aatttttgt 4560
atttttagta gagacggggt ttcactgtgt tagccaggat ggtatttttt aagattttaa 4620
aaaaagtttt gatgaatacc acacctgttt aaccctcatt cctctcaaga tacacatttc 4680
tgtcacccca gatgcgttaa aacttaatat cataagatta cttccaaata gatttttaat 4740
tcttttgttt ctgatgtatg tggaacactg gtgaagtaga aatccttgtt tgatttatgt 4800
attcgtaagt caggggggaca atagagacca tgaagattta gaattgaatc ccagtcccag 4860
cactagttag ctgcattact ttgggtgagt cagttacctt ttctgagtcc atttgctatt 4920
ctttaaaata ggttgtagcc tgtaatgcca gtattttcgg aggctgaggc gggcggatta 4980
cttgaggtca cgggttcgag accagcctgg acaacggt gaaaccctgt ctctactaaa 5040
aatatagaaa attagtgggg catggtggtc gcatgtacct gtaatcccag ctacttgaaa 5100
agctgaagca ggagaatcat ttgaacccgg gaggcggagg ttgtcgtgag ccgagatggt 5160
gcactgcact ccagcctggg cgacagagtg ggtaagactc catctcaaaa caaaacaaaa 5220
caaaagaaaa caaaaaaaat aacatagagg ttgtagtacc taatccacag ggttgttgtg 5280
aggattagat gagatattcg atttaaagca cttagcacct tgcctggctc ttagtaaact 5340
ccttataaaa aatggtaatt attgttaata ctcagcatag aatagtatta gttataatat 5400
taatactaaa tttgtttcct taatagtaat tatatttggg aaggtagtta tgtaggatac 5460
ctgtaagatg atgaatgatg aagtattctt gataactttt ttttttttc caaaatattg 5520
gtattgggtg tttaaacaga tgagagtgga aacaaattga aagcttaggt ttttctgtgg 5580
gaccatcccc atcagcattt taagtcttga catatctttc acaaatgaat agtctgtctt 5640
taaccttaga tggctggagt gctgccacgt ttcagcccct ttatcatgct actttaaaat 5700
atctccaact tgctgggcgt ggtggctcac gcctgtaatc ctagcaattt gggaggctga 5760
ggtgggtgga ttgcttgagg tcaggagttc gagagcagcc cggcaacat ggtgagcccc 5820
tccgtttcta ctaaaaacac aaaaaatagc tgactgtgat ggtgtgtgcc tgtagtccca 5880
gctactcggg aggctgaggc aggaggatca cttgagccct agaggcagag gttgcagtga 5940
gctaagattg tgccactgca cttcagcact tcagcctagg cgacagagca agaccctgta 6000
aattaaaaaa aaaaaaaaaa agaaaaggaa aaaaatttcc aacttattaa gggcttatag 6060
```

```
tgtgctgatt atgtaatagt tatggcttcc aatgtgtctg gcatagaact ggcatgtttc 6120
tgagtatctc acttcagcct catgacagag gtaaggacta tttttaattt aaactttaaa 6180
taggaggcaa caggccaggt gtggtggctc acacctgtaa tcccagtact ttgggaggct 6240
gaggcaggtg gattgcttga gtccaagagt tcaagactag cctgggcaaa atggtgaaac 6300
cccatctcta caaaaaatat aaataattag tcaggcatgg cggtgtgtgc ctgtagtccc 6360
agctactcag gaggctgagg tgggggcatc tctggggccc cggaggcaga ggttgtagtg 6420
agttgagatt gcaacactgc actccagcct gggcaacaga acgagaccct gtttctaaat 6480
aaatacataa ataggaggca acagatatag acagatatgg aggtaggtaa ggccttgccc 6540
aagatcatac acgttgggtt ttgcagatga ggccaagatc agactccatc tttggttggt 6600
ctgactccaa aggctgacca catagccatt gggccacagc acctgtgcac gtcagaattt 6660
attaagtata tcttgtattt agtcattata acaggaagac ttatgggtaa accctcagtt 6720
catctctttt taatgctgag atccccctgc ccagtaaagc tattattgca agtatagtat 6780
atacctatca tttgccttga gttatcaggt aaggatgctg tttgttcttt tcccatatag 6840
tgctgtttga atgaggttga gatacagtag caattttgtt ttccattcag gtgagtacct 6900
tagactgagt gtcattttgt ctttttttact tctactcaac aggatttcct gacatgttcg 6960
aggtcagtga ttgtcagact ttctgagcca gcaaaatttc ccaaattgct gggtagacac 7020
aggttttcca actttttatt ttgccaagta aggatatata aaaaaaaaat aaaaagaaag 7080
acctattatt ttctggccct tgtatttcat aaagggcatt ttaagaaaca acaagacagg 7140
aagaacatca tctcagaata aaggaccatt tttaaatttg aatacattta gttttataaa 7200
aaagatatca tgtggtgttc attttttctc atttcactgc aggctgttga aaactttgtt 7260
aagaaccagt actatatttg ggaacccctg ctttaattga tctaaactct tgaagaatag 7320
aagaaacaaa gcattttatt tttctgagtt actggcaact attactaaag tgacagatat 7380
ggtggccttg aatgcagtgc ttcccaaacc tgattgaggt ctgactctct tggggaccag 7440
ggtctcattc tgttgcccag gctggagtgt ggcagcacaa tcttggctca ctgcagcctt 7500
tacttcttgg gctcaagtga tccttctacc tcagtctcac aagtggctag gactacagga 7560
ccatggcact acacctggct aatttttttt tgtttgtttg tagagatggg atctcgctgt 7620
gttgccctgg ctggtcttga actcctgggc tcaagtgatc ctcccacctt ggcctcccaa 7680
agtgctagta ttccaggtgt gagccacctc tccctgctgg ggaacttgtt aataaaacag 7740
attctaggct acagtctgga aaattctaat tcatttggct gtggggggagg ggggcatagg 7800
accagagaat gtgtttgttt gtttgtttgt ttttcttaaa ttctccagtg ctgttgtgat 7860
tcaaatgcag ccggtctgtt tctgttatca agtgctgtgt aacaaagcac tcacaaagtt 7920
taaagcaaca atgatttatt ttttcttagg attctgtggg ttggctggac tcagctaggt 7980
agttctgctt catcctgtga tgtcagctgg ggtcacttgt ggggctacat tcagctggga 8040
ttatgtctgg gactggaaca tgtgggtgct gactgctggc tggggcacct tagtgtttct 8100
cacatggcct ctcttctcca tgaggtcttt cagtagtata gcccaggact cgtaactttt 8160
tttttttttt taagacagac tgtcgccctg tcgcccaggc tggagtgcag tggcacgatc 8220
tctgctcact gcaacctccg cctcctgggt tcaagcaatt ctcctgcccc agcctcccga 8280
gtagctggga ttacaggcac gtgcctccac gcccggctaa tgtttgcatt tttagtagag 8340
atggggtttc accacgttgg tcaggctggt ctcgaacttc tgacctcgcg atccgcctgc 8400
ctcggcctcc caaagtgttg gaattacagg tgtgagccac tgcacctggc cgactcgtaa 8460
cttttttgt aagtaataaa tattttaggc tttgtgggtc ctgtagtctc tgttgcaacc 8520
actcaacttg gccatggtag cacaaaagca gctaaagaca atatgtaaat gatggggtgta 8580
gctgtgttcc agtaaaactt ataaaaagtc cgtgggctgg atttggtcca agggctacag 8640
attgcacacc cctggtctag cccaagcatc tgtgcatggt ggctggcttc ccaaaagtgg 8700
aagctgctaa gctgcctttt tttttttttt tttttttttt gagagggagt ctcactgtgt 8760
tgcctaggct ggagtgcggt ggtgtgatct cggctcactg caacctccat ctcccgggtg 8820
caggcaattc tcatgcctca acctcccagg tagctgggat tacgggtgcc taccaccacg 8880
cctggctaat ttttgtattt tggtagagac agggtttcac catgttggcc aggctggtct 8940
caaactcctg acctcaagtg atccacccgt cttggcctcc caaagtgctg ggattacaga 9000
tgtgagccac cgtgtctggc cgcttgacaa gcttcttaaa ggcactgccc tgaactggca 9060
cagtgtcact tgtgtcacat tctttttggtt gaagagagtc tcagagatgg cacagattca 9120
aaggcaggag aaatagactc cagcgcttaa agtaaggagt agcatgtgcc tacagaattg 9180
gaggaactgt tggaggccat cttttgaagag agaccaccac tatccatggc ttggcacgtg 9240
ggaatcactg ctctatacca gggttgcaga ctcatgtctt tgggggccag gcagtgagta 9300
taaatgagtc aagtgggcca gttgaagat ggagtcagac ctgcagtgaa ctcccaaaca 9360
catctgctac cgggaggggc agcattactc agctccagct cagcgtcatc aggcaggaag 9420
gcgaggcagt gttgccggat gtgccagtgt ttcaaaagaa gccagagact ccatttttat 9480
tttttgtat ggaatctcct gattttgaaa tattggcaga taattcaaat tatcttaaac 9540
actacaggcc aaacaaaaca tatctgtggg ctagagacag tctgccagtt tgtaactatt 9600
tctccagatc atgagtaaat ttggctttac gatggtcact cagttcttat tactctaggt 9660
tgttcaaatg aattaaaaaa gctgaaatta tatgaataaa cccctgggca cacatgaaag 9720
aagtgaaaaa cccattgttt cctattgtag aaacatggaa gcatgtcaga gccagaggat 9780
ccagaggaaa tattctcact agcctcagac cctcaggagt gagggagctt ttcttgttaa 9840
```

4

```
tggccacgct tgtgcagttt tccttcccag gtgctggtga aagaaaccca cagtcttgga 9900
atcatggaag tgataccata atgactgtca gttgacgttg ctttaaagaa tgaagccaca 9960
gaattgtgct gttagcatgt cgtgagcagt tagttgagtt ggtggcttgt aatttactct 10020
gtgtggatgt tattgatcaa agcttttcat tattgacagt gtctccatct gctgtttgct 10080
gtttttaggg gaaaccaccc tttatgactc aacagcagat gtctcctctt tcccgagaag 10140
ggatattaga tgccctcttt gttctctttg aagaatgcag tcagcctgct ctgatgaaga 10200
ttaagcacgt gagcaacttt gtccggaagt gtaagtttgg ggaacttttt cttgaaaact 10260
gtcctgagag agaaaaacta gaaagatgct tgaggcagaa tgagttactg gttgatagta 10320
gtcggtaaga actctggttc tatataagac agatccaggt tcaaattcag gctgcacctc 10380
ttatagctgg gagaccaggt aagttgggct tcttggttgc aagcgacaaa cttaattcaa 10440
agactgaatt taggccaggt gcaatggctc atacctataa tctcagccct ttgggaagct 10500
gaggtgggtg aatcgcttga gcccaggagt tcaagaccag cttgggcaac atggtgaaac 10560
cccatctcta caaaaaatac aaaaattagc tgggtatggt ggcttgcacc cgtggtccca 10620
gctgctgagg aggctgaggt gggaggatca ctggagcccg ggaggttgag gctcaatgag 10680
ctgtgattgt gccattgcac tccagtctgg gtgacagagt gagaccctgt gtgaataaaa 10740
gagtgaattt attggctcat gaaactgaga aatccaggaa tgagttaagt tttagcttta 10800
ggcatagcta gttccagaga cctcaataat atcccgtggc cctgtcctta tactcactca 10860
gggctgactt tctattaggc agagtaggca cggtgcttag gatctgtgat atttaatttt 10920
aatgaattta attacttta attaactgaa ttaaattta atttgtttta aaattatagg 10980
aaaaatgaat ataataatgt ataatgattc tggattacat tcatctttat actaatgtag 11040
tcataaaata taattttgt tttttttgga gacagagtct tgccctatta cccaggctgg 11100
attgcagtgg tatatcatgg ctcactgcag tttcaacctt ctaggctcaa gcaatccttc 11160
cacccagtg gctgggacta caggctcaca ctaccacgcc cagctaattt ttgctttttt 11220
ctctgtagag atagggtctt actatgttac ccaggctggt ttcaaactcc aggcttgaag 11280
cagtcttcct gcctcagcct cccaaagctt tgggattaca ggtgtgagcc accatgcctg 11340
gccccataaa atataatttt tgaattcttt tttgtttta atggaggaag gggctgagga 11400
aggcaaaagt acctagggcc tatgaagtca tatattggcc ttgccttcac cctgtttctg 11460
actttgcttg acttccatgt gatgaggcag ttggctgtta gtgtcccagt ttcatactct 11520
tacattagtg ttttcaacc agtgggtgat ttgacgtttt cggttgtcag agctagttgg 11580
gggtggtggt gtgtgagttt gggggaagg gtcctactgt cagttaatgg gtgaggccag 11640
agatgccacc aaacacctta cagtgcacaa agcagccccc ataacacaga attatgtagc 11700
ccacaatgcc aacagtgctg aatttgagaa accccacctt gtacaacatt gctgtgcaac 11760
caaccaccct aaatattact gacttaaaac aatagtcact gtggctgggc gcggtggctc 11820
atgcgtgtaa gcccagcgct ttgggaggct gaggcggcgg atcacttgag gtcaggagtt 11880
ccagaccagc ctggccaaca tggtgaaacc ttgtctctac taaaaataca agaattagct 11940
gaatgtggca gcgggcgcct gtaatcccag ccattggga ggcagaggca ggagaatcgc 12000
ttgaacctgg gaggtggagg ttgcagtgag ccaagatctc accattgcac tccagcttgg 12060
gcaatgagtg agactctgtc ttaaaaaaaa aaaaagtta ttgtattacc tcttgtgtgt 12120
gtaggttaat tggactcagc tggggattcc tctgctctgt attacattgg ccaggattgc 12180
agtcacctgg ggctctcctg ggctggaatg tgtgagaggg cttactcagt gtttggtgcc 12240
ctggctgagg gctgggccc ctctctcttc atgaagtttc agggcctttt 12300
gctgtccaca tggcacctct atgtggtctc caaatcagaa gtcaaggaac tacagcctgt 12360
gatgcctatt ttgtaaagaa ggttttactg gaacacagcc ctacccatgt gtttgtacag 12420
tgcctatggc tgctttcaca tcataacagc attttatttc attttatttta ttttttttg 12480
agacaaagtc tcactctggc tggagtgcag cagcacaatc atagctcact gcagcctcca 12540
actcttgggc tcaagcaatc ctcctgtctc agcctcctca gtagctagta ctacaggccc 12600
atgccaccac taatggctaa ttttttaatt ttgtgtagag atgggacctt gtgagattgc 12660
ctaggctggt cttgaactcc tggcctcaag aaatcctccc accttggcct cccaaaatgc 12720
ttggattaca ggcatgagcc actgtgccca gcccacaaca gcatttgagt agttgtgata 12780
gagaccaaat ggcctacaaa gcccaaaata gttcctgttt ggcccatttc gaaaaggctt 12840
gctgacctct gagctacatg gtctctctag caggacagcc tcgacggtag ctcaggtttc 12900
caaaacacaa aagtgaagc tgccaggctt tcttaggggt tatcctagga gggacatagg 12960
atctctttga ctgcatttta ttgtttgatg catgctctgg ggctgctcaa attccacctg 13020
agaggaaact acacaaggtc atgaatccca agaggactgg ggcattgggt gctattttg 13080
gagactggct accacaccct gcccaatggt aatcttccct tatctagatt aatacaaccc 13140
cagggaagat tctaacttgg ctctgctttg ggtcatttgc ctccctggag gtgaggtgtt 13200
gtgatcggtt ttgttggaat gcccaaaggg gtcagggcag tgtgattacc aggacctcat 13260
ggaatggggg atgcgtggtt atgcaaagga gccggggatg ctgggtagaa aaaaaatcag 13320
catatgttca ctatagtgct cttcagtatt ttacatgtac tttgttctca gttttctcat 13380
ctgtaaaata ggaataatgt atatcctttt ttttttttt ttttggagt cttgctctgt 13440
tgtccaggct ggagtacagt ggcacaatct cagctcactg caacctccgc atcccgggtt 13500
caagtgattc tcctgcctca gcctcctcag tagctgggac tacaggcgtg caccaccaca 13560
ctcagctagt ttttgtattt ttagtagaga tggggtttcg ccatgttggc caggctggtc 13620
```

5

```
tcaaactcct gacctcaagt gatctgcctg cctcggcctc cgaaagtgct ggaattacag 13680
gcatgagcca ccacgcccat tgggaataat gtatatctaa tgaggctgtg ttggaattga 13740
atgagttaat gcacagacca gatttgtcat gttgcctggc ccataggaga caataaatgg 13800
tacccagtat taataactgt gaatgtcaac aacatttaat atattgtata tcttcaaaat 13860
gtacttgagg tatttgttca tcattctgtt tttgtttgaa taagctcgtg ccttcttttt 13920
gtgaatattt aaatttataa gtagcgagtg ggaggggaag gaagttatgt gatgaggcta 13980
gcttactgag ccatctgcag gcaccttcat tagtcttgag actgtcctct ggttacttaa 14040
cagcagtgaa ttatctagaa tcatttagtg atcagaagac ttggtttagt ggaatgtaga 14100
ttttttttcta atagacccct cttccaggga aatgtttcat atttttgaag aggtttcctg 14160
gggagtgttt aagaggccat gattgaaaat gggtgattac attagtgtgt tttctattcc 14220
tccccttttt gagtttctgt tttggaatgt aagctttgtt tttctacgtg gagaagggtc 14280
cctcagctgc ttctgcccag gttttttgaa tcttcctata gggatggaga ttttcttttgg 14340
ggactgttag agaaaatgga atagagtgta gctctgaagg agaaggatgt ctccagcaga 14400
agtacctcta gccttgggcc aagggaggga agggaaggga acgagcatct gggaaccagg 14460
gaagggattt ttgtctttct taattactct tacatcccca gtgcccaaaa tagtgtctgg 14520
catatgttaa gtccttagta aatacttgtt gaatgagtgt atgctcagtg aacaaaataa 14580
atggcaaaca ttaagcacag tatcagataa tttgtgtaaa aaatatacag cagtgttata 14640
ctaaaacttg cacagaggcc aggtgcagtg gctcacgcct gtaatcccag cactgggagg 14700
ccgaggtggg cagatctttg agctcaggag tttgagacca acctgggcaa catgctgaaa 14760
ccctgtctat acaaaaaata caaaaagtag ctggggcatg gggacgcaca tctgtggtcc 14820
cagctacttg ggaggctgag gctggagaat tgcttgaagc tgggaggtgg aggttgcagt 14880
aagccaagat tgtgccactg caccccagcc tgggtgacag agtaagaccc tgtctcaaaa 14940
cacaaaacaa cacccccttc aaaaaaaatc caaaaccacc accacaacaa aaaaacttac 15000
acagaaaagt gttgataatt gtcaaaattg ggctgttatt ggcaatttga cagtagctga 15060
attactacca tttgagctat attcactata gataagatct tcaatatatt tacaacttta 15120
gtactaatgg gaaaatgata acttttgaaa agtttttttt ttttcttatt gcaaacaata 15180
cacaatacaa tgttaaaatat agaaggttaa acgtgcatct gagtctgttt gggctgcgat 15240
aatagatacc ttagacttgg caatttataa acaatagaaa ttcattgctg acagttgtga 15300
agactgggaa gtccaagatc aaggcgccag cgaatctggt atctggtgat ggctccctgc 15360
ttcaaaaatg gcgccttctt gctgcatctt cacctggcag aaggggcaaa catgagtcct 15420
tcagcttctt tttttttttt tttctatgtt taaaacttttt ggtccggcgt ggtggctcat 15480
gcctgtaatc ctagcacttt gggaggccga ggcaggtgca tcatgaggtc aagagatcga 15540
gaccatcctg gccaacatgg tgaaacccc ccgtctctat actaaaaata caaaaattag 15600
ccaggcatgg tggcgtgtgc ttgtagtccc agctactcag gaggctgagg caggagaatt 15660
gcttgaacct gggaggcaga ggttgcagtg agccaagatt gcgccactgc actccagcct 15720
ggcaacagag taagactccg tctcaaaaca aacaaacaaa aaaaacaaaa aaaaactttt 15780
attttaggtt catgggtaaa tgtacaggtt tgttatgtag gtaaacttgt cttggggttt 15840
gttatagatt atttcgtcac ccaggtacta agcctagtaa ccaatagtta tttttttcaga 15900
ttgtctccct cctcccaccc tctgtcctct agtaggctcc aatgtctgtt gttcccttct 15960
tagtgtcctt gtgttctcat cctttagctc ccatttatat gtgagaacat gtggtatttg 16020
gttttctgtt cctgcattag tttgctaagg ataatgtcag cctctttttt tttttttttt 16080
tttttttttga tacagagtct cgctctgttg cccaggttgg agtgcagtgg tgcgatcttg 16140
gctcactgca acctctgcct cccgggttca agtgattctc ttgccttagc ctcctgagta 16200
gctgggacta caggtgcgca ccaccatgcc aggctaattt ttgtatttta gtagagatag 16260
ggtttcacca tgctggccac gctggtctcc aactcttgac cttgtgatcc gccggcctcg 16320
tcttttttccc aaagtgctga gattacaggt gtgagtcact gcaccggcc caatgtcagc 16380
ctctttttta gggaagtgat ttaatcactt ccctaaaagt cctacctcgt tttttttttt 16440
ggtttttct ttttttttt ttttttttttt ttttttttt taggtagagt cttgctctgt 16500
cacccaggct ggagtgcagt ggtgcgatct tggctcactg caacctccac ctcctgagtt 16560
caagcaattc tcctgcctca gcctcctgag tagctgggat tataggtgcc tgccaccacg 16620
cctggctaat tttttgtat ttttagtaga gttggggttt caccatgttg gccaggctgg 16680
tcttgaactc ctgacctcaa gtgatctgcc caaaatgctg ggattacagg cgggagccac 16740
tgtggccagc ccctgcaagt cctacctctt aatagtatta cactggggat tacatttcaa 16800
catgaatttt gtagggcgca ggggcacaaa cgtttagaat atagcacatc acatacatag 16860
tgagagaaaa atccctcaaa atcttacctg agacaatcac tgccaacaga ttgctgtata 16920
gtgtgccaat tttgtttgtg tgtgtgtgtg ccttaaaaat atttattatg gaaatttaaa 16980
aacgtaccc aaggtggcca ggtgtagtgg ctcacgcctg taatcctggc actttgggag 17040
cccgaggtgg gtgtattact tgaggtcagg agtttgagac cagcctggcc aaaatggtga 17100
taccagtctc ctaaaaatac aaaaattagc cgggtgtggt gggcacctgt agttccagct 17160
actcgggaga ccaagtcatg agaattgctt gaaccctgga ggcagaggtt gcagtgagcc 17220
aagaccatgc cactgcactc cagccagggt gacagagtga gactccatcc tagaaacaaa 17280
caaacaaaca aacaaaccaa ctaaccaacc agagaaaact ccctgtctgt aaggagtatg 17340
tgttctaatg gatactgagc catcttgttc tgtttaacat gtgcctaatg ttctttata 17400
```

6

```
tgggcggact tgtaggttgt ttcaactttt ctgttgatga acctttaggt ggtttctgat 17460
tattttgtg ttacaacagt tttcatcatt cacatctttg tatgcatctt ttttgagcac 17520
atgtgcaagt atttctgtgg acaatggatg attcctagaa attgaaagtt tggattactg 17580
tgttccaaaa aaggaagcaa tacacccagc tatgttggct tttgctcttg ggtccagatg 17640
attatctgac aaagttattc tctgattgca tttttcttttc ttttcttttc ttttttttttt 17700
ttgagatgga gtttcgctct tgttgcccag gttggagtgc aatggcgcga tctcggctca 17760
ctgcaacctc tgcctcccag gttcaagcga ttctcctgcc tcagcctcct aagtagctgg 17820
cattgcaggc atgcgccacg acacctggct aattttttgt atttttagta gagatgggat 17880
ttctccatat tggtcaggct ggtcttgaac tcttgacctc aggtgatcca cccgcttcag 17940
cctcccaaag tgctgggatt acaggcgtga gccacagtgc ctggccctct gactgcattt 18000
tcacagtgtt ttgggtcctt atctctacct cagtacctca atattcagtg cccactgggc 18060
ccttagatac tgcagctaaa agtgcacagg ggtggagtga tgtgacggtt ttggggtcac 18120
agaagcagct ggtatagaga gaagttgtga agtttttttt tttttttcctg agacagagtc 18180
tcgctgtatc ccctaggctg gagtgcagtg gcttgatctc ggctcactgc aacctctgtc 18240
tccctggttc aagtgattct tatgcctcag cctcccgagt agctgggatt ataggcatgt 18300
gtcaccatac ccagctaatt tttgtgtttt tagtagagat ggggtttcac catgttggcc 18360
aggctggtct tgagctcctg acctcaggtg atccgcccac ctgggcctcc caaagtgctg 18420
ggattacagg cctgagccat tgcgcctggt ctttttttttt ttttttttaag taatcatagg 18480
cttgaatgta gcctctcatc tgttcacctt aataatccaa aagcctttag ataaagaaat 18540
ggagatttgg aatggcttct cagaattcca agagagtatt gtcatggttt tgcctgcaaa 18600
gcaccgtggt ctgtctcctt gtgcagttga gaaagctggt ggtcgccact gacaggccca 18660
gagttattaa gttggacact gctttaagca actttgtaaa caatccaagg catactagag 18720
aattaggaga gattggcttt gtgtatgagc aataacaaaa tcaagttcaa tccagcaagt 18780
ttttggggaa ttataattca aaactcaaat acttgatctg gaagaaactt ggaaagaggg 18840
aaggaagaca ggcttgttac agcattgtca gggtaaaagg aaaataccgt gcagctttta 18900
attttgcttc ttcatggcat tccccatgta ggtgccctag atttgttttt tacagtggtc 18960
acgacttcat gtggatccac ccaccactct tgcctggttc cccaagggac caagggaagg 19020
tgtattcagg atgattgctg aagtgagggg tggggtctgt ggctgagaag actctcaata 19080
ccgcggcact cattataagc ctctgacaca ggagatttca actccacccg tgcaacaaag 19140
gaacagggtg ggcaagagta gttacagttg caggctgagt gcgatggttc atgcctgtaa 19200
tcccagtgct ttgggaagcc aaggtgggag gattgcttga gtctaggagt ttgagaccag 19260
cctgggtgac ataatgagac cctacctgta caaaaaaatt ttaaaaatta gccagattgg 19320
tggtgtgcgc ctatagtccc agctactctg gagaatgagg tgggtgaggg tcccttgagt 19380
ccaggagttc gaggctgcag tgagttatga ttctatgatt tcaccactgc attccagcct 19440
gggcgacaga gcaagattgt gttctttttt tttttgaga cggagtctca ctctgtcacc 19500
caggctgaag tgcagtggta cgatctctgc tcactacaac ctgcacctcc caggttcaag 19560
tgattctctc cctcagcctc ccgagcagct gagattaaaa gcggccgctt gtgtgcagct 19620
aattttgta ttgttagtag agatgggggtt tcatcatgtt ggtcaggctt gtcttgaact 19680
cctgacctca ggtgatccac ccgcctcgcc ctcccaaaat gctgggatta caggcgtgag 19740
ctactgcgcc cagccatttg tgtctcttaa aaaaaaaact aagaaaatga aaaaaatgac 19800
attggccaat tcattaaaat gccactcact gactgtggta tgaaatggct ttccctttga 19860
tggaccgagt ctgtctcatt gtgtgagcca cttgcagggc tgagtatgac tctggaatgt 19920
agctcctaac cttatctgct gcccagccat tgaaatggcc atcccttcca gttcccagaa 19980
gattccagtg tgtgtttggg atttttaagac agtctcttgg tcttcagtgt ggcatctttc 20040
tgccggattt tccaggataa ttttgattat aagcattgca ttgcccttgg tgtgtaatgc 20100
ctgtgtatga tgctgttccc ttgtaacgtg caggattaaa tttttgggtc agccactgct 20160
gctccccttc attcctgcag gtcattagag tcatcgtaca tttagcgatg tctcagatca 20220
gtgtatctag agtgttaata aacatgttag attccaaatc tactgtccat ttaatccata 20280
cttcatacgt tgaggatctc tgactgaaag attagacttg gaaaaataat aagactgtat 20340
ggtaagaaaa ctatagttgc aaatccattt ggacatgtag tatgtcagcc ctgcagagca 20400
gatgtcagaa ccccatttag ttctctgagt gctaagccct tctgcccacc acgctgtttt 20460
tttttttttga gatggagtct cgctctgtca ctcaggctgg agtgcagtgg tgtgatctcg 20520
gctcactgca agctctgtct cccaggttca cgccattctc ctgcctcagc ctcccaagta 20580
gctgggacta caggtgctca ccaccatgcc cagctaattt tttgtatgtt tttggtagag 20640
acggggtttc actgtgttag ccaggatggt ctgatctcc tgaccttgtg atccacccgc 20700
ttcggcctcc caaagtgctg ggattacagg cgtgagccac tgctcctggc ccccacgcct 20760
tttttttttt ttggagacag agtttcactc tgtcacccag attggagtgc tgtggcacaa 20820
tctcagctca ttgtgtcctc tgcctcccag gttcaagtga ttcttgtgcc tcagcctcct 20880
gagtaggtgg aattacaggc gtgcaccaca acacctggct aattttttgta tttttagtag 20940
agatggggtt tcaccatgtt ggccaggctg gtctcgatct cctgacctcc agtgatccac 21000
ttgcctaggc ctcccaaagt gttgggatta caggcgtcag ccaccatgcc tggacccctc 21060
tgcccctta agcactgcca catattagat ctacgaaggc tttatggata caatccaagg 21120
aagatgaacc ttgggctagt gggataaaac taagcgcatg tagttagaat ggaatgatct 21180
```

7

```
ggaaaccagg tcccaagttg gtctaaatta gactcatgtt gactatgtca cactgtaaac 21240
cagtctaaat gctaataagc atgcttgacc aaacactgcc ctgcagcctt cagagaggaa 21300
gaaggaaaac ataatttgta tcctctctcc ctatttctg agtctatggg attcaaattg 21360
tagctgccat ggaaactgta ctttggaatt tctagagccc ttaattttaa cttaacatat 21420
aaaaacactt ttgtactgat tttataatta ttcatgatgg atgagaaagt gaatgtcttt 21480
gacagtgagg gaagctatcc gaatgctatt ttcttttttt tttttctttc ataaagatgc 21540
atatatttgc atgctttatt tacctggggc taactcttgc atcttttgca gattccgaca 21600
ccatagctga gttacaggag ctccagcctt cggcaaagga cttcgaagtc agaagtcttg 21660
taggttgtgg tcactttgct gaagtgcagg tggtaagaga gaaagcaacc ggggacatct 21720
atgctatgaa agtgatgaag aagaaggctt tattggccca ggagcaggta ggaggatttt 21780
aacatcatgc ttttccactt tctgtaccgg agtgttcatt gcaaagacga taatctgctg 21840
cactggcgtc taggatcaag cacgttttcc tctgtgactc tatatttaat tatagttggg 21900
gcaaaaaggt ctctcatgtt cttagctcat cttcttgaac tgatgttggc taattttgaa 21960
ggctcacaaa ttcctcttga tgtatcatgt ttctatcgtt gtaatttatt tcagaaccaa 22020
ggtggccttt tagctaatga atttaagatg atcttttatg accattagct gaggactcag 22080
gatatacata tggtgggggtg aatcagattg cttttgtaca cgctttaggt atttgtgttg 22140
tgggcatatg gatttggttt taaaacaggc ctttgaagaa atcaaataac attctttgtt 22200
atgtggctag ggagttgctt gtttgagagc aggtagaacg ttatcttttt tgttgtggta 22260
ttttttcttt ttttaaacaa ggctactgtc tctagacata ttgattcatt tgctgtgtt 22320
tagagagatg gccgtcagcc ttggaattca gagagtaatt tattacttac agacatttta 22380
gtgcacatga tatgtctgat aatgtaccca gctctgcagg aagcttgcaa aaggaataga 22440
agtcccatgg ttgctatttt cagtgtttaa aaacaaccctt ggaaagtgga ggaaaaatgc 22500
aaatgtataa agcaggtgct taccagctaa agtatcacag aagtgggaga gcaattagca 22560
aattaattaa cgatgatgtg aggggagatg ttgtgggtga gcaagggaca gttagggaca 22620
gttctcaccg atggggggaa atgtaggttc tcggcagaga gaagtgatga gaacatgttg 22680
ggtagaagtg tgacattctg gagtactaga atgctatgca agtgtgtgtg tgtgggtgtg 22740
tgtgtgtgtt cagtggttca gaacagactg ggaaatggcg aaatgaggac atttgggtgg 22800
ggaggggggaa atgggtggga aactcaagaa ccttttttta aaaattgtg gtaaaatata 22860
tataacataa agtgtaccat tttaaccatt tttaaatgtg caactgagtg gtattcagtg 22920
cattcatgat gttgtacaac catgaccgct ctccatttct agaatttttc tatcatccca 22980
aacagaaact ctctatccat tatacaatac ctcccccattc ccccaagaac cagttttga 23040
attgcagttt actttgtgag gctgttgggg attatttagg cctctggaag gaggaggttg 23100
ggatcagagt ctggccctgt ggacttcaat gactttgtgt ggcctccaat cagagaagca 23160
gcggagggca ggaagctgct tgtcagaatc tgagagtgat gtggcttctt tgtttagcaa 23220
taaaatgtga gcacataata gaaaggaaaa gtgacaggac atggcagata atttggaaga 23280
gaggagtgga agatgctcac tcagcctccc agctcctgag aaagaactgt gtctcatcag 23340
ttcatactac ctgagcatct gttgtatctg gtgtgtttct aggtcctgga gaagaggcat 23400
tacgtgtagc cctgaccttg tgatgcttat gttttttgatg ggaaatagtg cgtgtaaaaa 23460
gaaaataatc caacaggcca cacggcaggc aaacaataga gatattcaaa taggtatacc 23520
ttcctccagg tgaatggcct gaaatgaccg tgtggaagtg tgggctgggg gcttataaaa 23580
ttatacacat acaggcgcta actaaagccg cctattcatt ccttaagagg atgcatagaa 23640
aagaaaagta gggtccttaa ctgagccatt tggaatttaa gggcatgaga gaagccagca 23700
caagcagtga agggaaggaa aagaagtgcc cgagaggagg gagggatgct gttctgcaga 23760
caaggcctgc cgcctgggag aggcccgcac gcccacccag ggttctctga cagctggaag 23820
gggtcttcag agactgttta tattttattt atttatttat ttatttattt tgagacagag 23880
tctctgtcac ccaggctgga gtgcagtggt gcgatctcag ctcactgcaa gctccgcctc 23940
ccaggttcac accattctcc tatctcagcc tcccgagtag ctgggactac aggcgggtgc 24000
cacaatgccc ggctaatttt tttgtaattt tagtagagac ggggtttttac ctcgttagcc 24060
aggatggtct tgatctcctg acctcatgat tcgcccacct cggcctccca aagtgctggg 24120
attacaggtg tgagccactg tgcctggccg actgtttcta ctattttaga gagagggtct 24180
cactgtcatc tgtgctggaa tgcagtgatg cagtcatagc tcactgcacc ctcaaactcc 24240
tgggcttaag cgaccctccc gcctcagcct cttaagtagc tgggaccata ggcatgtgct 24300
gccacaccca gttaacttta ttatttattt atttatttag agaatgagtc tcattctgtt 24360
gcccaggcta gaggtgcagt ggcacgatct cggctcactg caacccccgcc tcccaggttc 24420
aagcgattct tcttgctcag cctcctgaat agctgggatt acaggcacct gccaccacac 24480
ctggctaatt tttgtatttt tagtgcagag ggggggtttc accatgttgg tcaggctggt 24540
ctcgaactcc tgaccttgtg atctgcctgc ctcggcctcc caaagtgctg ggattacagg 24600
cgtgagccac cgtgcccggc ccactttatt attttaaaaa cattgtttta tttttatttt 24660
tttgagacag agtccgctgg agttcagtgg ccggatctca ctcactgcaa cctctgcctc 24720
ctgggttcaa gtgattcttg tgcttcagcc tctctagtag ctgggactac aggcgggtgc 24780
caccatgcct ggctaatgtt ttttgtatct ttttagtaga gacggggttt tgccatgttg 24840
gccaggctgg tctcgaactc ctgacctcaa gtgatctgcc cactttagcc tctcaaagta 24900
ctgggattac aggcgtgagc cactgtggct agcccccagc taactttaaa aaaaaatttt 24960
```

8

```
gtgggccggg tgcagtggct cacgcctgta atcccagcac tttggaggcc aagcagggcg 25020
gatcacttga ggtcgggagt ttgagaccag cctgaccaac atggagaaac cctgtctcta 25080
ctaaaaatac aaaaaattag ccgggtgtgg tggtgcatgc ctgtaatccc agctacttgg 25140
gagctgaggc aggagaattg cttgaatctg ggaggcagag gttgcagtga gcttagatca 25200
cgccactgca ctacagcctg ggcaacaaga gcgaacactc cgtctcaaaa aaaaaaaata 25260
aattatgtag aggtgggatc tccctatgtt gcccggactg gtcttgaact cctggcctca 25320
agtgatcctt ccatctcccc ctcccaaagt gttgggatta caggcatgag ccacccctcc 25380
tggctgagac tgcttatttt atttattttt aatttttttt gttttgagac tgcttatttt 25440
aatggaagct tcaggggtca gacggggtca gacagagtca ttggtgagca agcaaaggtg 25500
tagactgttc agttcagcct tccttggaca ccttttatgt gccagacaaa agaaggatca 25560
gcatatcagg tgcagtaaat tattgggggtt atgttggtgt ttcccaaatg tgttagattt 25620
atccctggta gtgttaaatc tcatgatttt aggtagtata tggacaacct atgtaaaaac 25680
atttaatagt ttaatattaa ctagcatatc aaaacctgtg actttgctca cgcctgtaat 25740
cccagcactt tgggaggcca aggcgggagg atggtttggg cccaggagtt tgaggccagc 25800
ctaggtaaca tggtgagacc ctgtctctaa aacaaaacaa aacaaaacaa acaaacaaac 25860
aaataaacaa atcccctgta acttgttcta acaataacct aaacaatttt ttatttaaaa 25920
ttaaataaaa aaattgaaac agtaaccatt tttttttttt tttttggaga cagagtcttg 25980
ctttgtcacc tagtctagag tgcagtggca caatctctgc tcactgcaac ctctgccttc 26040
aaacaattct cctgcctcag gcttctgagt aggtgggatt gattacaggt gcactccacc 26100
atgcccagct aatttttgta ttttttagtag agacggggtt tcaccatgtt ggctaggcta 26160
gtcttgaact cctgacctgc agtagtccac gtgccttggc ctcccaaagt gctgggatta 26220
caatcacaaa tttatagaaa agttgcaagt accatgtagt cagggttctt aagagaaatg 26280
gaaccagtag gagatagata tataatcatc tcctaggatt ataagttgac acataagact 26340
aaccgtcaca tacagtataa acaacttttt ttcttaaacc atttgataga tacacacaca 26400
ctgatataca tagaatatat atacacacac acagaatgta tatacacata gaatatatgt 26460
gcatacagaa tatatacaca gaaatatata tgtacacatg catagaatat atttacatat 26520
atatgcatat atataattta tttatttaa gcagttgatt tatacagttt ttgttttgt 26580
ttttttttg agacagagtc tcactctgtc acccaggcta gagtgcagtg gcgagatctc 26640
agctcactgc aacctctgcc cccgggttcc agtgattctc ctgcctcagc tccacaagta 26700
gcacaccacc atgcccagct aattttgta ttttttttag tagagacgag gtttcatcat 26760
gttggccagg ctggtctcga actcctgacc tcaagtgatc cgcccgcctt ggcctcccaa 26820
agtgctggga tttcaggcgt gagccaccac acctggctcc cataatgtct tttagaataa 26880
aacgatcgag ttgaggatca cacgtgacac ttaattgtcc tgtctcttta gtctccttca 26940
atctggagca gttctttgat ttttcctgga ctctcatgac cttgacaatt ctgatgatta 27000
taggccagtt attttgtaaa atttgaattt gtctgatgtt gcttatgttt agatttaggg 27060
tcttggtctt tggccggaat atctcagaca agatgctctg ttcttattgc atcagagcag 27120
aagactctct gtttcagttg atcacattta tgttgatgct cactttgatc acttgattaa 27180
ggtggtgtca gttatgcctt tctacttgta gggttactcc ttcctccttc gtgattttat 27240
ttattttatt tttcttagag acagggtctt gcttggttgc ccaagctgga gtgcagtggt 27300
gggatcttgg ctcactgcag ccttgaactc ctgggctcaa gtaatccacc tgccacagcc 27360
tcctgagtaa ctgggactgt aagcgaacac caccacaccc agctacttt tgtattgtag 27420
agatggggtc tcactgtgtt gtccaggctg gtctgtaact cctggcctca agcagtcttc 27480
cggccttggc ctcccgaagt gctgggatta caggcatgag ccactgcacc cagcctcctt 27540
tgtaattaaa aaagtatttt atggggagtt actttcaagt gatggaaata ttttatatct 27600
atgtggactt ggattttcct atttcagtca gtgagttata atccatttct gtcactagtt 27660
ttatacttaa attgttccca acttggccac tgagaacctt tttaggttag cttttgtgtc 27720
cttttcacat gtctccaaga ttcattgaat actttcctgc tttctggtat agcaagatgt 27780
tcaggttctt ttggtacttt tactttctct gccctggctc tggcatcagt catttctcag 27840
aggagccctg tgcctttcag tggacaatgg tgtttagagg ccaagatctg gacattgggt 27900
gttttcattg ctaccggtgt gtcactactc ccagacccct ttcagtggac agcactaagg 27960
aatacacata cgtatataca atatatccac ctacacatgt gcgtgcactc acacacacac 28020
atatacatta catctatatt tgtgtatcca tgtctatata ttgaaaattg tggctgggca 28080
cagtggctta tgcctttaat ctcagcattt tgggaggctg aggcaagagg atcacctgaa 28140
gccaggagtt caacaccagc ttgggaaaca gagagagact ctgtctctac aaaaataaaa 28200
agggaaaacc atgagttcac acccgtgccc ccagttccaa tccaacttca cagggttcat 28260
tttagttttc acccttttcca tgtttgtaat tctcttctct gacattatac ccttaatatg 28320
tttacttatt ttatgcatct gtatgcatcc aatctactgt ctttgttggt atcccacctc 28380
cccttggtgg gtccagataa tctgctctgg gttgcccttt cacgtggatg tcttccttac 28440
cctgtgtggg cctgtgatac tgggctgccc ccacacatga gtgctgccct cctcacgttg 28500
cttgggacgg cactgtgtcc tgggccacca tgactttct cataactagc gtggatgctt 28560
accttgttcc acaccagtga atggcttcag gaagagaaga ggaagagaaa aatatttaca 28620
tttaaagaaa ggtagtttaa agaaatatgt taggtaaaga attgagcagg taatatacgg 28680
agctggcaaa aattgtgacc aaagtaggtg aatgattgag atttatgcaa ttctgggcta 28740
```

9

```
agtgacagcc cctttccctt ccctcccctt ccccttccct tcccttttct tccctttccc 28800
ttcccttttcc ttcccttttcc cttccccttc ccttccctt  ccttccctt  ccctcttctt 28860
ccttccttcc ttctgtttttc ttttcccttc tttcctttgc cttttttttt tttttaaagc 28920
tagaaacatc agtttaggca taaagacaga ggaaaaggct tctttttcct ctcacagttc 28980
tttataattg tctaagcagt ttctttttttc cctaggtttc attttttgag gaagagcgga 29040
acatattatc tcgaagcaca agcccgtgga tcccccaatt acagtatgcc tttcaggaca 29100
aaaatcacct ttatctggtg agtctttaca tctgtctctc tggaattagc ctagcactct 29160
gacactcaga tgcctgtggt agaactgaat gttgttcttg cccatgtggt ctcattcatg 29220
caaagacttt cttaccttac aggtgtctcc ctggtttcct cgttataaag atcaagagct 29280
aacccattta gaaacagcct cattgggctg aacgtggtgg ctcacgcctg taatcccagc 29340
attttgggag gccgaggcgg gtggatcacg aggtcaggag atcaagacca tcctggctaa 29400
cacagtgaaa ccccgtctct actaaaaata cagaaaaatt agccgggcat ggtgtcgggt 29460
gcctgtagtc ccagctactc aggtggctaa ggcaggacaa tcgcttgaac ctgggaagcg 29520
gagcttgcag tgagccgaga ttgcgccact gcactccagc ctgggtgaca gagcaagact 29580
ctatctcaaa aaaaaaaaaa agaaaaaaaa agaaacagcc tcattgacag ttggatattg 29640
tagctgtggc tttcaggcaa taatagggaa tcatttattg gggaatagtc tgtcattatg 29700
tataagataa tcttgcttta attttttaaaa acttcctgtg ttagcttgct taggattaaa 29760
aaaatgataa tagtgcatgg ttgttataag aaaatgcaaa cactgcagac atgcatgaag 29820
ttgaagggaa agcccccccat tttcttttcc ttttcttttt ttttgagaca gagtctcgct 29880
ttgtcaccca ggctggagtg cggtggcact atctcggctc actgcaatct ccacctccca 29940
ggttcaagag attcttctgc ctcagcttcc ctagtagctg ggattacagg cacgtgtcac 30000
cacgcccaac taattttttgt attttttagta gagatggggt tttaccacgt tggccgggctg 30060
ggccgcaaac tcctgacctc aaatgatcca cctgcctcgg cctcccaaag tgttgtgatt 30120
acaggagtga gccactgtgc ccggcctctc cgtttttattt tctaatcctc ctccctaggg 30180
gaagaaatgt taaatggtta cataagcttt cccttttctga cccttaactg tgctctgtag 30240
gagcatggtg ggggatgttt cttttcttttt cttcttttttt tgagaccagg tctcactttg 30300
ccacccaggc tggagttcag tggcatgaac atggctcact gcagcctcga cttcctgggc 30360
tccagcaaac ctcccacctc agcctcccgg gcatacacca ctgtgcctgg ctaattttttg 30420
tatttttagt agagacggggg tttttgccatg ttgcccaggc tggtttcgaa gtcctgagct 30480
caagagatct tcctgccttg gccttccaaa gtgctgggat tacaggtgtg agccaccatg 30540
cccagctccg gtgggggata tttctatatc cacatgtgta tagtttactt tataaaaatg 30600
gtatgttact ctgtgcttgg ctctccagct tgctgttgcc tttcaccagt gtatcccaga 30660
catcctttct tccttgtcag taacgcaggt ctacttttatt cttttgagcag tggcataatt 30720
ttccctgatg tgtatatatc ataagttaga gaatgctaaa attcattttg gggccttgtt 30780
taggttcttg agggattaaa ttcctaaatt taacaagtgt atcctggaaa caattttttgt 30840
tcctgattca gcccttaaaa gaggactatc atgttacctt gaatggagat aaacaggctc 30900
acgtaagaga aaagggtaag agggatgaac tcccacttat cttaaacttc tactggcccg 30960
tttttggggga atttgctgct tttattcctg acctaaaata aataagttta tgtgtcttgg 31020
tttcatatta gttgagaacc cagtgcctgg agagaagttt tccttgtcct ctgagtgagg 31080
acattcacat atgaatctat tggcagactg gctttgactg accacacgtg ccttcagaac 31140
caatgccaca gctcttaggt ttatggcctg aaacacccttt tccttacata ttgccttaga 31200
aactttcctt ccttgagaca tggggcatgg aaccctcacc ttcacagatg accttggtgt 31260
gtttctaggg ttgctggtgt tccaggacat ctgttgcaga tgcagtattt accttgtgct 31320
ctctgcatca taagcagctt ctcatgtttg aatgtattaa cagactttta atttttttta 31380
ttttgagac aaagtctcac tctgtcaccc aggctagtgt tacccaggct ggagtgcaat 31440
ggctcaatct cagctcactg caacctccac ctcctgggtt caagcgattc tcttgcctca 31500
gcctcccgag tagctgggat tacaggtgca tgacaccacg ccctgctaat ttttgtattt 31560
ttagtagaga cggggtttcg ccatgttggt ggggctggtc tcaaactcct gacctcagat 31620
gatctgcccg ccttggcctc ccaaagtgct gggattacag gcgtgagcca ctgcgccttt 31680
tcttttcatt tttttttctga gatggagtct ttctctgtca ccaggctgga gtacagtcat 31740
gcaatctcag ctcactgcaa cttccacctc ctgggttaaa gtgattctcc tgtcttagcc 31800
tcctgtgtag ctgggactac aggcgtgtgc caccgtgccc agctaatttt tatatttttta 31860
gtagagacgg ggttttgcca tgtgggttag gctggtcttg aactcctgac ctcaggtgat 31920
ccacccgtct tggcctccca aagtgctggg gttataggcg tgagccactg tgcccagcct 31980
caggcttctt tattaagaag aagttcgggc caggtgtggt ggcttacacc tgtaatccca 32040
gcaatttggg aggccgaggt gggcagatca ggaggtcagg agatcgagac catcctggct 32100
aacatggtga aacctcgtct ctactaaaaa tataaaaaat taggcaggta tggtggcggg 32160
tgcctgtagt cccagctact cgggaggctg agggaggaga acggtgtgaa cctgggaggc 32220
ggagcttgca gtgagcccag attgtgccag tgcactccag cctgggtgac agagcgaggc 32280
tccgtctcaa gaaaaaaaaa aaagacgttc ccttgaaaca acaggcttt tgtttgttttt 32340
ggtttgtgtt tgtttgttat tgttgtttta gatacgtatt tttttctttc tttttttttt 32400
ttaagtgatg atgtctctgt tgcagtggca tgatcatagc tcactgtaac ctcaaattgc 32460
agggctcaag tgattctcct gcttcacctt cctgattagc tgggacaaca ggtacaaacc 32520
```

10

```
accatgccta gcgaattttt aaatttttca tagagactag ggtctcacta tgttgcctag 32580
gctggtttcg aactcctggc cccaagtcat cctcctgcct tggcttccca aattgttggg 32640
atcacaggca tgaatcacca cacccagcct attttagat attttaattc gagctctaca 32700
ggaggtttag aacactagct tgtgaagata aacttcattt tcaaggccac acagaatcta 32760
agtggtcctg gaattaggaa gggctttgat ttttggacc aaagttgaga gtcccacagtt 32820
ttctggtcta ccttgcactg ctccataaac tcatatttct tttctctgag ctgaagagct 32880
ccccttcttg gtgtctagtc tcaggcaact tattcttaaa agtaagcatt attgaaatgc 32940
tttgggattt tcacatcatc aaggtccatt ttggtagagg cactgacaga ttttgagtgt 33000
tctgtgtgaa ggaactcagt tgaggattta gtggtccatg tggcaggcta ctgctcagta 33060
gcttcaggga aaccactgct tgcctcccct gtggccagtg aggatgatca gaggagtccc 33120
agcaggaatg cccaaatgta gttttcttac atgttgatgg gagtgcattg tttcatgtct 33180
aaacagttct caaatcacat cttcaggagg gtactatctg ggcactttga taatttctca 33240
ctttgatgtc accgttctta ttaccatcac ctagtttgt catagtagaa ataacttcc 33300
ttttctgtg tgtgtgtgtg tgtgtgtgtg tgtgtgtgtg tgtgtgtttt gagatggagt 33360
cttgccgtgt tgcccaggct gtagtgcagt ggcgtgttct cggctcactg caacctctgc 33420
ctcccgggtt ctcctgcctc agcctcccga gtagttggga ttacaggcgt gtgacaccac 33480
gcccggctca tttttgtatt ttcagtagag atggggtttc accactttgg ccaggctggt 33540
cttgaactcc tgaccttgtg atccgcccac cttgacctcc caaagtgctg ggattgcagg 33600
tgtgagccac cacgcctggc tttttttttt tttttttga gacagagtct tgctctgttg 33660
cccaggctgg agtgcagtgg cgggatcttg gctcactgca gcctccacct cctaggttca 33720
agcaattctt ctgcctcagc ctcctgagta gctgggatta caggtgccca ccaccatgtc 33780
cggcaaattt ttgtattttt agtagagaca gggtttcacc atgttggcca ggctggtttc 33840
taactcctga ccccaggtga tccgcctgcc tcagcctccc agagtgatgg aattacaggc 33900
atgagccact gcgcctggcc acctttgtct tcttagttgt ggatttaact gctgtggaca 33960
tctgcttggg catagccttc ccggagtacc tcttggattg ggactgtctg tgggtttctg 34020
tgctaggaca ggctcccaga tgtaggaggc ttccccaatg atctcaccac tggcatcggc 34080
atccttagct tctactcagc ttttccatct gccatcttgc aagatggaag gttgtttgt 34140
ttttgttttt gttttttggt ttattttttt tgagatagag tctcgctctg ttgccaaggc 34200
tggagttcag tggcgcaatc tcggctcagt gcaacctcca cctcctgggt tcaagtgatt 34260
cacctgcctc agcctctgga gtagctggga ttacaggcgc gtgccaccat gttcgtttaa 34320
tttttgtat ttttagtaga gacggggttt caccgtgtta gccaggatgg tctcgatctt 34380
ctgacctcat gatccgccctg cttcagcctc ccagagtgct gggattacag gcgtgagcca 34440
ccgtgcccag cctaggaggg ttcttaatgc agctgttttt tggagttctg gttgcctcag 34500
cacactgcta cttgggtcaa tgacattttt actcccttgt tttgtagctc aattgggtat 34560
tactgatggg attttgtaat tattaatatt ttcttgtctc cattttcttc tcaagtactt 34620
tgttgctttt gagtaaaatg cttgctaagg gtatagtttt cacataaaag ctcaaattta 34680
gcatggaaat taagatatgc tcatacgtct gccatcctt atctgtaatt ctgaaatacc 34740
tagagttctg aataacctca aattcttttg ttacttgttt atcagcaaaa cctgatttga 34800
actcagtttt tggcaaaact tgatccaagc tctcttaagg ctctttttag tctttattca 34860
ttcctttag tgtgacttcc cattttgcta taaaattatg agtgtgtttg attacaaggt 34920
gatgtcccag accctactga gggtgttaca taatataaac tgtatgtatg gctgggcgcg 34980
gtggcttata cctgtaatcc cagcactttg ggaggccgag gcgagcggat aaccttagtt 35040
caggagttca agcccagcct ggccaacatg gtgaaacccc gtctctacta agaatacaaa 35100
aattagccag gcatgatggt gggcgcctgt aatcccagct actccttagg ctgaggcagg 35160
agaatcactt gaacccagga ggtggaggtt gcagtgagcc aaggtcatgc cactgcactc 35220
cagcctgggc gacaaagcaa gaatctgtct caaaaaaaaa aaaaaaaaag tgtgtgtacc 35280
actttacctt tctaaaatct gaaaaattct gaatctggaa acccattctg cttcaagata 35340
aatggatcct agatttatat cggtaccgta cagtcctgaa attccatcct atctattggc 35400
cactttaca tcaacaaacc tttgaagttt ggggaaactt acatatcacg ctcccttggc 35460
agttgaacat tatttattta ttttgagatg gagtctcgct ttgccaggc tggagtgcag 35520
tggcgcgatc ttggctcact gcaacctctg cctcccgggt tcaagcaatt ctcctgcctc 35580
agcctcctga gtagctggga ttataggcat gcaacaccat gcccagctaa tttttgtctt 35640
tttagtagag acggggtttc actatgttaa ccaggctgtt ctcgaactcc tgaccttgta 35700
atcttccctc ctcggcctcc caaagtgctg gaattacagg cgtgaaccac cacgcctggc 35760
cctgaagata cattttaaat caatgaaaaa aacaacagga ttctacctcc tatggtatat 35820
ccctcctggc tgtctcttct ctccagtctt gcctctgctg tgtgggtttc aggcatccat 35880
cttctctact ctgaattact gtgataacct ctgaagtatt ttccctgcca tctgtctggc 35940
ccttctccca ggtcttccac atactgcagc caagtcagcc cgctgttgaa acccttcaag 36000
actccctgct gtcctctgga tgaagtccag actcttccac gtgacttacc aggcctttct 36060
tgcacttgtc cccagccact tactgtttct ctctttctac cttaacatcc tgaacttcct 36120
ttggttcttt gaccttgcct ctgacctttt tccatgctgt tcactctttc cctgttcacc 36180
ttgctaactc ctctttctct ttctgggttg gatcagattt cacttcttcc agaagccctt 36240
cctagaccct atacttctgg aatggcgcct tttgactgta cgctcattgc accctgtact 36300
```

11

```
tctcctttat gagtgggtgc tggtctgtcc cactaggcta cttcatccat aaagggagag 36360
tagagcttta ccaagtcaat gcttaagcaa tatttattgg atgaatgtgt gattaatttc 36420
atagaaattt gatgtgcatt caaatttact tattgtatta cggaacttgc attatattct 36480
cagtggagtt attttctttc acgtgtgtaa ttcaagatag actcagtgag attttcaaaa 36540
tttggaatgc agtgcaagga aattgaactt gagttctttt gcattttgat ggttaaaaat 36600
ttcccatttg tggtgacata ccacaataag ccagtgaatg tggcttattg ttttctggtc 36660
tatagaaaat tgtcgcaaac tctgtcataa tgtctggttc tatataacaa agctagtcct 36720
gtattctgca tgtggctgat ggaaacagtg ctctgttgat ctggttcatg aagaaatctg 36780
ttcaattctg cataacagat gccttcatca gtgtccttcc atgaaggagc tgatcttcac 36840
aaagaacaca tagttttgca tcccaccact tgcagtattt tttttttttt tttttttttt 36900
ttgagatgca gtctcgctct gtcaccctgg ctgagtgca gtggcatgat ctcagctcag 36960
tgcaacctct acctcctggg ttcaattgat tctcctgcct cagcctcctg agtagctggg 37020
attacaggcg cacaccacca tgcctggcta attttgttg ttttagtaga gacggagttt 37080
caccatattg gtcaggctgg tctcaaactc ttgacctcat gatctgcctg ccttggcgtc 37140
ccaaagtgtt gggattacag gcgtgagtca ctgtgccctg ccagtattgt tttgtctaaa 37200
ttatttgtgc tgatgttttt cctactgtgg ttttcttcag attacccttg ctctgagcct 37260
gcaattgact catgaacttc ttttccatgt tctaacctta caatgacttc cttgtgttca 37320
ctccaaatgt tttttccctgg ttgcatgtag agatgtatta gctaaggtac atgcttagct 37380
gctgtatcaa agagacccta atgtacaacc caggctggta gagcagctct gctgtatgtg 37440
ttaattcagg gacccaggtt ccttccatgt tgtgactccc cccttcctta ggatgttgtc 37500
ttctttttaca tggctgaagt tgggccattt catgtctctg ttccagctgc ctggtaggaa 37560
aaaagaacag aaattcagag taagcaaatt cttttctat agatggatgc ggaagttgga 37620
cacatcattt cctctcacat tttctcggcc agaacgtagt catgtgactg cacgtctagc 37680
tgctaaggag actgggaatt tactgtcggc tgtgtggcct ctgtcaagct aaaattctta 37740
ttactgtgga ataagggaag gatggatttg ggggcacaat taatagtctg tcacagaggc 37800
taaaacagct gcttttggct gggcacggtg gctcacacat gtaatttcag cactttggga 37860
ggccgaggca agtggatcac ttgagatcag gaatttgaga ccagcctggc caacatggtg 37920
aaaccctgtc tctcctaaaa atatagaaat tagccgggca tggtggcggg tacctgtaat 37980
ccgagctact ccagaggttg aggcaggaga attgcttgaa cctggaaggc agaggttgca 38040
gtgagccaag atggtgccac tgcactccag cctgggcgac agagcaagac tccatctcaa 38100
aaaaaaaaaa aaaggttaaa taaacagctg cttttgtagg tgatacaagg tacagctaag 38160
ctttgaagcc aggcctgtag tttcaccttc catattctta ctcaaggcat tatacttctg 38220
gatctgaaac cactggatct gatgccctgc ttgggatgag ttctttatat tatcttgctt 38280
tcaacccaca cctgtgtaat tttatgggca gcgtttgttt cctatatagg aacaatttga 38340
aagtgggctg tttctaggct ttcatgaata gcaggctatg ctgtcattgg gaatctggag 38400
ggagttaatg aacacaactt cattgtttac tttagtgaaa tgtggcagct tatgatagtt 38460
ttgacagtga gacatgtgct gttttgatct ctcagctaag attatctgat ttttcaggca 38520
tgtctcaaaa ctcaccaggc ctgctcacat gctgctgctt ctgaagccag ggtttggaaa 38580
ccagctgccc atcagaatga ggctgtgact tagaatattg gttcttgttt tattaccatt 38640
ccttgtttgg tctctccaga gtcactggcc tttttccgctt caatttttctt atcggtgaaa 38700
tgagatatta attcctctta ttgacttcaa ttcaattgct gagtgtattg ttgcctttgg 38760
gaggttcttt gagttttctg tgcctttgaa atagttgttt tttttattc tggtgttttg 38820
aggcatgttt caagtgagtg catttacact tctaccattt taggagccac aattcagtta 38880
tgttgtccca gcttgcttgg ccccatcccc agagtttctg attcagtagg tctggggtgg 38940
ggcccaataa tttgcatttc ttcttctttt ttcgagacag agtctgactg tgtcatccaa 39000
gctggagtgc agtggcacga tcgtagctca ttgtagcctc aaactcctgg gctcaagccg 39060
tcctcccacc tcaccctcct gagtagctgg gactataggc atatactacc atgccctgcc 39120
acctttttaa tttttttgtaa ggatggggt ctcactgtgt tgctcaggct ggtcttgaat 39180
tcctgggctg aagtgatcct cctgcttcag cctccccaaa tgccggcatt cctggcatga 39240
gccactgcac ttggccaaga ctttgcattt ctaactagtt tccaggtaat gctgctgctg 39300
gtgtagggac ctcattttga gaaccattgt tctatagctg tagctatagt tagtttctgg 39360
ttatagcttc ttccttttgt cccttcagta atagtgtaca catccgaaat ccctgtcctt 39420
gctctttcag gcccaggcat ggtatctggt cctcttctgt tgctagccct ggggtgcttc 39480
atcatcccaa gtttattttt cttctcctaa cctgaacctt tgtaaatagc cccttcccta 39540
atgaacgtcc tcaattccct gttttgcgtg tcctgtctgt ttcttggcaa gactctggat 39600
gattcagtac tcaatgagga tttttcgcat agatggatga aacaggctgg gtttcatgtt 39660
ttctaagata aaggtgcttc tctcttttc tcttggtcac tttgaccaag aagaaaataa 39720
cagagttttt attctcaaga agaataatat cggggccact ctgctcagag gccactctgc 39780
tttgaggacc ccttctctcc tccctcatgc caaagatcag gaacattggg cagagcggat 39840
aacgatgccg ccagcgtcat tacatttttca cggcactttc agttgtgctg agcgtgcaaa 39900
catttcaagg agacatttct aagaggtggc tagcacagca tgcctctaat gccctatgtg 39960
aattggaata gagtactaaa gaactgttca atattcaccc catccccgca tatgcaagca 40020
tgcacgtggg ttcattgtat atgtgtgtgt gcacgtgtgc acagacacat ttgtccttcg 40080
```

12

```
tttcaaatgc aacacaatgg atggaaattg ccttcctggt actggggtat ggatgcaaac 40140
accaacagag aagcagccgc tacttccaaa ctgaacacat gtgagatttg ccctttaatt 40200
agcatctgca gctgctgcca tcagaagggt ctgtctctgt tggcctgaaa gtctttgctt 40260
taaaagagca agtccattat agctccaagc caggctcgtc tgtcagctgc tgtgctttct 40320
ctgccatcag cggggttgcc acattgtttt gggctgtttc actctaggac tctttcctcc 40380
tcctgtgccc ccagcctttg attaccatgc cttggtgatc ctcatttggg tgacctgcag 40440
ctgctcattg tgtgtgcagg agacatctcc agtccttgta aggagggaag atcactggct 40500
tcagtgctga tggactggtt attttccagc cctttgtcgt cagtgatctt gtcttgatat 40560
gcagaaaggc tccaggtagt cactgaaaaa aatataagca gcagaggtga tggctatatg 40620
aaagtcacgt ttcatcaagg gcattgctgc tatggaaact ttcaattcac ttggagtagg 40680
gagccatatt ggttccacag cctcctcagc agtgggtccc aacacagtgc tgggctagct 40740
gcctctgaat caccgcagta gctcctttta ctatagattc ctgggtccca cccatggaat 40800
gtgatccatg aagtctgggg ttattccctg gaatccttta agctccctaa gtggttggga 40860
tgggaaagag atatgcttta tgttactata cttcttctta ttattatttt aaaattcttg 40920
ccgggcgcag tggctcacac ctgtaatccc agcacattgg gagaccgagg cgggtggatc 40980
acttgaggtc aggagttcga gactggcctg gccaacatga tgaaatcccg tctctactaa 41040
aaatacaaaa attagctggg catggtggcg catgcctgta gtcccagcca ctccggaggc 41100
tgaggcagga gaatcgcttg aacccgggag gcagaggttg cagtgagccg agatcgtggc 41160
actgcactcc agcctgggta acagatgag acttcatctc aaaaaaaacc caaaaaaaca 41220
aaactctttt tcattatacc ggaacgtcag ctttatggag tcggggattt tttctgtttt 41280
attcactgct gtttccctaa catctagaat agtggctggc acgataggca ctcaagtatt 41340
gatttagatg agtctatttt attttctttt aaattttaa ttttattag aggtgggtc 41400
tggctttgtt gcccaagctg gtctcaaaac tcctggcctc aagcgattgt actgcctcag 41460
cctcccaaag ggctaggata ggcatgagcc aacatgcctg gcttgtctta ttttaacaa 41520
gcacttctgg tgattctgat ggacaatcag gcttgggaag ttctaaccta gaggacctac 41580
agttgtcttg gggtagaagc caaggctatc ctggttttta gaatcagtgc cttactgggc 41640
atctctgaag agtaaaagtc agggacagag ttacatttt ggacaaaacc agatgctgtg 41700
aatggactct tggtcacaac ctgggtggcg acttggtcct taacttcttc atcattttct 41760
gctgaccctg ttctttggtt cacagcaagt cacctgataa gaagactcaa agactgctag 41820
tttgttactt tagatgatgc ttttggaacc tcttggtacc attttaacaa tccaaacgta 41880
ttttatgaaa gcactcaagt cctgggtctt tattgtatct ttaagctcta acagcatgat 41940
gattgaataa gctgtggttg gccacacaca agccatcttc cccatggcct ccattcatac 42000
tagaatgagc agctataccc cagtagtata gttttgggat atgggtaaca tcttgggata 42060
gccacattta cttagtaaat gtctggctta cattctccta atggtgcact gttggaattt 42120
ttggtgtggt aacctggaat agtgttggtg ggtcaagttt gattagcatc tttgataagg 42180
acccggtcta tttagaggtt tgtcattgag tgtgtctgtt ttggcctcat gttgtgaagc 42240
atgctgtgta gcagctgttg taattttgt tgcttgtttt ctcaatcaac cctggttttg 42300
aagaaatggg aagttgttcc actcttagac tgatctgact tgggagggga ttttcagttc 42360
aggaagttgg atcttctgaa tggaagcaaa gaatacatgt cttttgcca ctttacaagc 42420
tggctcttgt tttctgaact attttactgg tcattgcaaa tagaatgtca ggagtagctg 42480
ccaaatacta agttgtgttc agttgtcag ttcttaagag ttgccggtgg ctgctctgct 42540
atgcgtatga ctttctcagc cttaaactta caagccatac tgttttttc acatctttaa 42600
tacagccata ggaaatttat aactgtggcg tgtcgtcata aatatgcatt gttcttattt 42660
taagacattt cagtactaaa agtataagta cttctgttat tatctgtgaa tttctttcct 42720
tcttctttt ttggatattt aagacctttt cgatgtcaat atatatttaa aacagacata 42780
taaattagca ttcacccaca tacccagggc ctatggagaa ccaggttggg atgagtgggt 42840
gagctacagg cagccaggtg gctcctgtgg gctcctcgag gactggggtg agtaactaat 42900
gtctgctagg aacttggggg aaagaaggtg tgtatgttag gtgctgcccc cttctaagtg 42960
ttcctcttgt tcataatttt tttttttttt ttttttttta gatggagtct cgctctgttg 43020
ccaggctgga gtgcagtggt gtgatctcag ctcactgcaa cctctgcctc ccgggttcaa 43080
gtgattctcc tgcctcagcc tcccgagtag ctgggactac aggcatgcac caccatgccc 43140
agctaatttt tgtatttta gtaaagacgg ggtttcacca tgttggccag ggtggtctcg 43200
atctcttgac cttgtgatcc gcctgcctcg gcctcccaaa gtgctgggat tacaggtgtg 43260
agccactgtg cccagcccat aaatcaaaat tttttcagca attgttatac aagtggaacc 43320
ttactcttca aatgcaattg tccagtgtct ggcttaatgt ctgctgttgt cagaaaccat 43380
gtgaatggag tagattccca ggttataagg agcccccagg gaggatgcgc gagtcactgg 43440
cttctccagg ggtctctggt ttggggttgc cttggtgctg ggcacacttc ctggagattt 43500
tactggacca gcctgaggcc tttggggctc tgtgcagatg ctctacttct gacttgtcta 43560
gagctttctt ctaattctgg actaaaagca agcaggagtt tggaggatga tggtgagaat 43620
tcacatcccc gagttggctt ttggaatgca gtagtttgtg agatttagtg ttttttttaa 43680
gaagtatatt cagatcttgc cttttcccca gaaagcatat gagacaactc ccaagacatt 43740
tatagcatgg ctaataaat gggaaatcag ggcgaaggac aggagaactc aataagggtt 43800
aacatggcta cagcgattgt ctaaatgggt tctttttgct ggccagagca gaaaggatca 43860
```

13

```
tgcagtaaag tggggggaa gaaagggaat tgaatggtag gtgaagactt catgttggtg 43920
ccaggcactg tgccaggccc tcctaggacc ttgtcttact caatcctcac acagtgctgc 43980
aagaggatta gtcttatccc tgttttagag aggatgaaac tgaaaggcag cgaggtgaag 44040
tcaccagcag gaggctgaag ccgcccaggc taactggcct tatagctacc tagggactca 44100
ggaatatcac acctgtttat catcaaaagg agaaaggatt tcagttcctt ggggtagaag 44160
agtttctttt tgctaatcaa acattttact tgaggcttca tattcttctt caagattttt 44220
ttcctgtgta tgtaccaaca catgtaataa ttccttgttt atttcaaaaa aggggttgta 44280
ctttattctt tacaagattt cactttatat tgtcatggac aatttttccat ggcagtatga 44340
ataaatggaa tctgtttgtt tttaatatct ttgtcttatc ccattgttta catatgtcat 44400
attttagcca gtctctaact gatggatagc tgaatgattt ccatgttttt ttcccctgtt 44460
acaaacaata ctgcaaggaa tctatttatc tttctattta tctgcaaact attgtaagta 44520
cctgtaaatt gttagaagtg gaattactag gtcaaagggg atattttcac atttaaattt 44580
tgaatagagg ctgtcagttg ccttccacac tgactataaa aggaaaagat tgtatcacat 44640
ttattgcaag ccttctgtat tctgctgggt gctgagggga atacagaaag gatataagag 44700
tggttgccct ctaggaatat ccgtctacac tgtacctaat cctagggaat gtctgggggtg 44760
tcaacttgtg ggtgggaaag tgggtggatt taattcaact gttcaagctt gccttgcaaa 44820
cactgtgcat ggtgtctggg actagtcttt cattatattg attcccctgg gtaacagatg 44880
taatttcctt agggcaggga cttcatccta catgacttac agcgtgcctt acacatcttc 44940
tttgctttgt ggagaccttg ttattataac acgtcaggtg atattcgagg atctaattga 45000
ggcattccct attttttgggt gtgtgaagaa ttaataactt tggcattcta tacaggtcat 45060
ggaatatcag cctgagggg acttgctgtc actttgaat agatatgagg accagttaga 45120
tgaaaacctg atacagtttt acctagctga gctgatttttg gctgttcaca gcgttcatct 45180
gatgggatac gtgcatcggt aagtgagact ctggtagcat ttttatgctg aggattttcc 45240
tgtgtcgcat aagagttcct gcatggaaat gagtggatga gtgatttcaa gatcaagata 45300
acgccccatc cagttttttag ccagtctacc aataactggc tgaaagcaaa ctttccaaga 45360
tggaggacat ttcagcttgc ttatccagca gtgcaataga tctagaattg taatgtgctc 45420
aagtttgcta gtaatatcta ttaatgtagc taaataagac tgggaactct tgcatgggtt 45480
ctttgggtta tatgatagaa gaactgaatt tggtttgcag aaggaaatgt cataccacat 45540
agtagtgtaa gaccatggag ctgtacttct ctaactctgc ccgttagaat ttacaatttt 45600
tttttttttt ttttttttttg agacagagtc tagctctgtt gccaggctgg agtgcagtgg 45660
taccatattg gctcatggca acctccgcct cctgggttca ggtgattctc ctgcctcagc 45720
ctcccaagta gctggaatta caggcacgca ccgccatgcc cagctaattt ttgtattttt 45780
agtagagatg gggtttcacc aggttggcca ggatggtctt gatctcctga cctcatgatc 45840
cacccacctt gtcctcccaa attgctggga ttacaggcat gagccaccat gcctggccta 45900
caaaatcctc agttggtaag tggttcttca tgtcttcatt catctgatgt tttgtgtaca 45960
tctgagaatg ttgtgggaat acaatgattg ttagtccagg aatcacaaaa tttgagatag 46020
agtctcagct tttccattgc ctagctacat gaccttggga aaatttcata gctcctttttg 46080
gccttagttt tcctcatgtg aaatgtgtgt ctctaggaga aataatccat tgaataatat 46140
gtgtttcatt tctcttcctt ttctttctct cctatccttc cttgctccct ctcgccctttt 46200
ttctctttcc ccctctctcc ctctctctct ccttccttcc ttcctttcgg ttaaattcat 46260
tttgcaaaat gtatgctaat aatttatatc caccaataga ggaggtctat ataacagaat 46320
acataaacaa agattttttgg ctcaattgag attctaggtt agcacttgct tgctgattgg 46380
gatggaggag gcaattcatg gtcctgattt tcttacagag acatcaagcc tgagaacatt 46440
ctcgttgacc gcacaggaca catcaagctg gtggattttg gatctgccgc gaaaatgaat 46500
tcaaacaaga tggtaaaaaa tggaataaga tagcttaata gagtttatac taaaaagtat 46560
tcttggtcct cctaagtttg ggaagtgttg ggataaaatg gtgaacaatg ttttggagcc 46620
tttggcagtg tatggggggtg gggacaggga cacagaacca tttcccagac cgtggcacct 46680
ttttatttat agtgcctgtt aataccctcc aagacatttt taggagcatt gttatagttt 46740
ggttagaaat aaaggaaaat gcttatttttg tttctctctt cattttcctt gcctgttata 46800
gactgtcttt tgttatatta tctttttttac tttaaaatat tttgatgaaa tggaaactcc 46860
tgcatgtcaa atcctctatt tcctatgcag caaaattgaa attaatcact ggagcatttg 46920
aaccaaatat ccttaagtgt taagaaccaa gtgctcaaaa tatcattttt aagtcttgga 46980
tctttggtag aaattaaact gtattccaca tgctaagtag dacggcagga gggtagctac 47040
tgagatcaag agtgagacta ctttaggaaa aagatgacaa agtaaaaaaa gattagagtt 47100
taaaaatctt ctaataaagt tggtatgtac taaaatatga atttggaagt caactccgca 47160
aaaaggata ggtctaagag aaaatcgact taggtttttaa gactgattttt acaactgagc 47220
catttggtga cctagacaaa tccttgggaa cttgatcttt tatactttct ctagaaaaaa 47280
ctgatgctag tgaaaatgca taatttaaga ggttagagaa gctgctcttc aaaatgcccc 47340
ccaagtctga gagttaaatc ctttacataa aggacaatat gtaaaatttt cttttttcttt 47400
tttctttttt tttgagacgg agtctcgctc tgtcccccag gctggagtgc agtggcgcga 47460
tctcggctca ctgcaagctc cgcccccctg ggttcacgcc attctcctgc ctcagcctcc 47520
cgagtagctg ggactgcaag cgcccgccac catgcccagc taatttttttg tatttttagt 47580
agagacgggg tttcaccgtg ttagccagga tggtctcgat ctcctgacct cgtgatccac 47640
```

14

```
tcgcttcggc ctcccaaagt gctgggatta caggcataag ccactgcgcc cggctctttt 47700
ttttcttaaa ctgcttccag aaaagtggat attattaggt tgatgttaag aaaaggcttg 47760
gagttgcatt aacttttgc tttctagcat ctggcctgtc tgttctgcag acctgagacc 47820
tacttgagat aattttcttg gtgttcaggc ccttggaaaa ataagttccc tatgttgtcc 47880
agtgtcaaag tttctcaacc tcagcactat tctttttttc aggttatttt cttgtaatct 47940
gttcacttga tcattacatt aagaattaga ttatattgct ataactacaa agcattttat 48000
gttttaaaaa ttatgtacaa tttagaaaca ggcatgaaaa cttaggtatt aaatttagtg 48060
gaataaagca cagaaaaaaa gttaaaataa tgcagtttta tcacttagga ttaaacattt 48120
atatgggccg ggtgtagtgc ctcacacctg taatcccagc acgtttggag gtcgaggcgg 48180
gaggattgct ggagtttgag accagcctgg gcaacaaaat gagacctagt ctctacaaaa 48240
aatcaaaaaa ttagccagac atggtagtac atgcttgtag ctccagccac atgggaggcc 48300
aagacagtag gatcgctgga gcgaaggagg ttgaggctgc aatgaccgtg tttgcaccat 48360
tgcattccag cctgggcgac agaacaagac cctgtcttaa aacaaattta tatgctgcat 48420
tcgtgaaatt aaaaaaaaat catggattta gaaataaatt gaagcaaggt acattgacag 48480
tgtaacctca gcactactga cattttgatc tgaataattc tttgttgtgg gggatgcgct 48540
gtataagatg tttagctgca tccctgactc ctacctccta gatgccatta gcaccctccc 48600
ctccagatgt gataaccaaa aatgtctcta gacattgcca gatgtgcctg gggtaggagg 48660
gttgggggaa gtggggtttg agaacccta gttgatcatg cctgcagtag gttgagaagc 48720
atcagaaagc taattaatta gacaggaata tgtgtttgca gta                   48763
```

<210> 4
<211> 251
<212> PRT
<213> Rattus norvegicus

<400> 4
```
Met Leu Lys Phe Lys Tyr Gly Val Arg Asn Pro Ser Glu Ala Ser Ala
1               5                   10                  15
Pro Glu Pro Ile Ala Ser Arg Ala Ser Arg Leu Asn Leu Phe Phe Gln
            20                  25                  30
Gly Lys Pro Pro Leu Met Thr Gln Gln Gln Met Ser Ala Leu Ser Arg
        35                  40                  45
Glu Gly Val Leu Asp Ala Leu Phe Val Leu Leu Glu Glu Cys Ser Gln
    50                  55                  60
Pro Ala Leu Met Lys Ile Lys His Val Ser Ser Phe Val Arg Lys Tyr
65                  70                  75                  80
Ser Asp Thr Ile Ala Glu Leu Arg Glu Leu Gln Pro Ser Val Arg Asp
                85                  90                  95
Phe Glu Val Arg Ser Leu Val Gly Cys Gly His Phe Ala Glu Val Gln
            100                 105                 110
Val Val Arg Glu Lys Ala Thr Gly Asp Val Tyr Ala Met Lys Ile Met
        115                 120                 125
Lys Lys Ala Ala Leu Arg Ala Gln Glu Gln Val Ser Phe Phe Glu Glu
    130                 135                 140
Glu Arg Asn Ile Leu Ser Gln Ser Thr Ser Pro Trp Ile Pro Gln Leu
145                 150                 155                 160
Gln Tyr Ala Phe Gln Asp Lys Asn Asn Leu Tyr Leu Val Met Glu Tyr
                165                 170                 175
Gln Pro Gly Gly Asp Leu Leu Ser Leu Leu Asn Arg Tyr Glu Asp Gln
            180                 185                 190
Leu Asp Glu Asn Met Ile Gln Phe Tyr Leu Ala Glu Leu Ile Leu Ala
        195                 200                 205
Val His Ser Val His Gln Met Gly Tyr Val His Arg Asp Ile Lys Pro
    210                 215                 220
Glu Asn Ile Leu Ile Asp Arg Thr Gly His Ile Lys Leu Val Asp Phe
225                 230                 235                 240
Gly Ser Ala Ala Lys Met Asn Ser Asn Lys Val
                245                 250
```

<210> 5
<211> 251
<212> PRT

15

<213> Mus musculus

<400> 5
```
Met Leu Lys Phe Lys Tyr Gly Val Arg Asn Pro Pro Glu Ala Ser Ala
1               5                   10                  15
Ser Glu Pro Ile Ala Ser Arg Ala Ser Arg Leu Asn Leu Phe Phe Gln
            20                  25                  30
Gly Lys Pro Pro Leu Met Thr Gln Gln Gln Met Ser Ala Leu Ser Arg
            35                  40                  45
Glu Gly Met Leu Asp Ala Leu Phe Ala Leu Phe Glu Glu Cys Ser Gln
        50                  55                  60
Pro Ala Leu Met Lys Met Lys His Val Ser Ser Phe Val Gln Lys Tyr
65                  70                  75                  80
Ser Asp Thr Ile Ala Glu Leu Arg Glu Leu Gln Pro Ser Ala Arg Asp
                85                  90                  95
Phe Glu Val Arg Ser Leu Val Gly Cys Gly His Phe Ala Glu Val Gln
            100                 105                 110
Val Val Arg Glu Lys Ala Thr Gly Asp Val Tyr Ala Met Lys Ile Met
            115                 120                 125
Lys Lys Lys Ala Leu Leu Ala Gln Glu Gln Val Ser Phe Phe Glu Glu
            130                 135                 140
Glu Arg Asn Ile Leu Ser Arg Ser Thr Ser Pro Trp Ile Pro Gln Leu
145                 150                 155                 160
Gln Tyr Ala Phe Gln Asp Lys Asn Asn Leu Tyr Leu Val Met Glu Tyr
                165                 170                 175
Gln Pro Gly Gly Asp Phe Leu Ser Leu Leu Asn Arg Tyr Glu Asp Gln
            180                 185                 190
Leu Asp Glu Ser Met Ile Gln Phe Tyr Leu Ala Glu Leu Ile Leu Ala
        195                 200                 205
Val His Ser Val His Gln Met Gly Tyr Val His Arg Asp Ile Lys Pro
    210                 215                 220
Glu Asn Ile Leu Ile Asp Arg Thr Gly Glu Ile Lys Leu Val Asp Phe
225                 230                 235                 240
Gly Ser Ala Ala Lys Met Asn Ser Asn Lys Val
                245                 250
```

<210> 6
<211> 251
<212> PRT
<213> Mus musculus

<400> 6
```
Met Leu Lys Phe Lys Tyr Gly Val Arg Asn Pro Pro Glu Ala Ser Ala
1               5                   10                  15
Ser Glu Pro Ile Ala Ser Arg Ala Ser Arg Leu Asn Leu Phe Phe Gln
            20                  25                  30
Gly Lys Pro Pro Leu Met Thr Gln Gln Gln Met Ser Ala Leu Ser Arg
            35                  40                  45
Glu Gly Met Leu Asp Ala Leu Phe Ala Leu Phe Glu Glu Cys Ser Gln
        50                  55                  60
Pro Ala Leu Met Lys Met Lys His Val Ser Ser Phe Val Gln Lys Tyr
65                  70                  75                  80
Ser Asp Thr Ile Ala Glu Leu Arg Glu Leu Gln Pro Ser Ala Arg Asp
                85                  90                  95
Phe Glu Val Arg Ser Leu Val Gly Cys Gly His Phe Ala Glu Val Gln
            100                 105                 110
Val Val Arg Glu Lys Ala Thr Gly Asp Val Tyr Ala Met Lys Ile Met
            115                 120                 125
Lys Lys Lys Ala Leu Leu Ala Gln Glu Gln Val Ser Phe Phe Glu Glu
            130                 135                 140
Glu Arg Asn Ile Leu Ser Arg Ser Thr Ser Pro Trp Ile Pro Gln Leu
145                 150                 155                 160
Gln Tyr Ala Phe Gln Asp Lys Asn Asn Leu Tyr Leu Val Met Glu Tyr
```

16

```
                   165                    170                    175
Gln Pro Gly Gly Asp Phe Leu Ser Leu Leu Asn Arg Tyr Glu Asp Gln
            180                    185                    190
Leu Asp Glu Ser Met Ile Gln Phe Tyr Leu Ala Glu Leu Ile Leu Ala
        195                    200                    205
Val His Ser Val His Gln Met Gly Tyr Val His Arg Asp Ile Lys Pro
    210                    215                    220
Glu Asn Ile Leu Ile Asp Arg Thr Gly Glu Ile Lys Leu Val Asp Phe
225                    230                    235                    240
Gly Ser Ala Ala Lys Met Asn Ser Asn Lys Val
                245                    250
```

1